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ABSTRACT

Readers cannot profitably be studied without some assessment of the texts they read. Analyses of texts, however, are of doubtful value unless tested against readers' behavior. Despite the relative neglect of text in research on reading, numerous approaches to the analysis of text have been proposed. The developments within linguistics and the interest within psychology have greatly improved the ability to examine readers in relation to texts. Much of the work on text analysis and reading has, however, taken only one type of reading into account--that is careful reading for learning. The emphasis on reconstruction of text--in matching descriptions of the story or the text base with what the readers recall of it--should not lead us to overlook the importance of the reader's rapidly discerning a structure without having to study in detail all the propositions, sentences, and so forth which constitute it. There are conventions between reader and writer that are more specific in print and that make reading an efficient medium. These deserve and require more study if only for their practical application to developing reading as a purposeful interaction between reader and text. (HOD)

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CONSTRUCTION AND RECONSTRUCTION OF TEXT

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INTRODUCTION

The reader, rather than the text, has received most attention in research in reading. This is seen in reviews of studies in major areas such as eye-movement research (e.g. Levy Schoen and O'Regan, 1979), remedial reading (e.g. Vernon, 1971), and models of the reading process (e.g. Singer and Ruddell, 1976). More surprisingly, it seems also to be true of work in cloze procedure (see e.g. McKenna and Robinson, 1980) and in many studies of comprehension (reviewed in Davis, 1972).

Lack of attention to the text used may be taken as a criticism of a good deal of the psychological work on reading. Similarly, failure to study reading under relatively normal conditions has tended to lead to underemphasis on the interaction between reader and text (Pugh, 1978).

Part of the difficulty in the past has been due to the fact that linguists have not been much concerned with texts; hence, the criteria were less well established for analysing texts than for analysing the eye movements used in reading them, for example. Emphasis in linguistics on the primacy of speech and, subsequently, on syntactic structures held linguists back from studying text structure, though it should be noted that much of the work on language in the 1960s gained impetus from its application to problems of machine translation of written discourse.

In general, however, the functional or situational aspect of language was understressed at this time and it is only more recently that there has been acceptance of the work of writers such as Halliday who emphasise the social aspect of language (e.g. Halliday 1978). This change, which has accompanied a considerable growth and diversification in linguistics as a discipline, has also made linguistic studies more consciously and obviously relevant to education.

The trend towards a concern with function is reflected in curricula for foreign languages and, to a lesser extent the native language (see e.g. Ulijn, 1980 ; Brumfit and Johnson, 1979). It has led to, or at least been accompanied by, a renewed interest in the neglected skill of writing. Although we do not discuss writing per se in this paper, it may be noted that recent interest in the structure of text might have application for writing as well as for reading.

The current interest in text structure and reading is mainly due to changing concerns in cognitive psychology and the study of memory (see Baddeley, 1976) rather than representing a shift in approach to the teaching of reading. Indeed, one important researcher in reading comprehension (Tuinman, 1980) warns that terms from the memory research such as 'constructive comprehension' and 'schema theory' may well represent little more than yet another fad. While Tuinman sees some advantage in the study of how readers organise text in schemas, and how they constructively interpret texts, he considers a good deal needs to be done before reading comprehension can be taught with confidence. However, beyond the early stages, and even at them some might argue, reading is reading comprehension. In other words, we cannot conceive of reading a text simply in order to have read it without gaining some information or influence from it and having satisfied some purpose. Insofar as schools attempt to inhibit these aspects of normal interaction they restrict the development of reading both in terms of reducing motivation and denying experience of what reading is for. Blampain (1979), writing in a sociological tradition better established among French writers on children's reading than elsewhere, argues this point strongly in drawing attention to the way in which reading in education is often overdirected.

Comprehension and reading cannot, therefore, usefully be separated and this is well (if implicitly) accepted by those who adopt the information processing

view of reading which Goodman (1968) and Smith (1971) have proposed. However, that work has tended to be concerned with reading at lower levels and has led, particularly, to increased use of cloze procedure and miscue analyses. It has not resulted in much increase in attention to the teaching or study of reading beyond the sentence. It is this which several developments in text analysis appear to promise, for they provide ways of describing larger features of text structure than hitherto and they require validation against reading behaviour to a greater extent than appears to have been generally thought necessary for sentence grammars. Moreover, the concern we have mentioned in linguistics with functional uses of language encourages us to look at interaction and shared convention in language encounters, of which reading is one.

'And' is an imprecise conjunction as regards weight accorded to the two items it joins (see discussion in Halliday and Hasan, 1976). Conference titles need such ambiguity, of course; this paper attempts to resolve it by arguing that readers cannot profitably be studied without some assessment of the texts they read and that analyses of text are of doubtful value unless tested against readers' behaviour. If this contribution focusses mainly on means of analysing texts, that is not to gainsay the view just stated but reflects the fact that texts have been more neglected than readers.

ANALYSES AND DESCRIPTIONS OF TEXT

Despite the relative neglect of text in research on reading, numerous approaches to the analysis of text have been proposed. Although 'text analysis' is now coming very much into prominence (into fashion, almost) not all the approaches are new. There is, for example, a long tradition of the study of rhetoric, the art of composition, which dates back to the Greek and, thus, as far back as the (recorded) instances of syntactic analysis in the West (see Kennedy, 1980).

There was a different emphasis on textual study in the nineteenth century, where research was particularly directed towards the establishment of definitive texts. This work helped hasten the final decline of rhetoric and composition as well as influencing English literary studies towards study of the text per se.) There have been many attempts at analysis of text content, as in studies of racial and sexist bias in literature (e.g. Zimet, 1976) but more notably in analyses of films and the media. The recent study of television, More Bad News (Glasgow Media Group, 1980), is an example. Sometimes content analysis has depended on word frequency counts and word frequencies have been much studied with a view to establishing authorship, for example. Other applications of word frequency studies are more related to theoretical concerns such as semantic co[illegible]ti n or to testing Zipf's laws (Zipf, 1935) about the relationship between word frequency and word length. More practical applications of this work are in preparing simplified texts and in readability research.

This list is by no means exhaustive of work directed towards text. For example, we have not mentioned the considerable and varied body of work in literary criticism and stylistics. Nor does it bring us up to date, to those approaches to analysis of text which have most interested recent researchers in reading comprehension. These recent approaches may be classed according to whether they are principally in the tradition of linguistic models of text or whether they claim to have a psychological foundation. Furthermore, they may be differentiated according to the extent to which they deal with large structures of text as opposed to starting from the sentence level.

A purely descriptive linguistic grammar of text is offered by Werlich (1976). Although this makes psychological assumptions, its basis is the text itself (and particularly, literary texts). A rather different approach is that of Halliday and Hasan (1976) in their study of cohesive ties. To describe this work as linguistic rather than psychological is not to suggest that the analyses cannot be psychologically validated. Indeed, as John Chapman reports at this

conference, work is in progress to test the development of cohesive ability in schoolchildren. The linguistic/psychological distinction is nonetheless valid in that linguists take as their test whether their grammars can be used to describe unambiguously certain features of a language. Halliday and Hasan adopt a further constraint, similar to Chomsky's dictum that the rules formulated for a grammar should apply to all and only the sentences of a language (Chomsky, 1957). Thus Halliday and Hasan are concerned not only with describing texts but in excluding these passages which are not, in their usage, text.

Linguists tend to start from the 'bottom-up' in their analyses, that is from the sentence. However, the typographical sentence (between full stops) is not necessarily the unit of discourse which we recognise as a sentence. In fact, as Gray (1977 Chapter 1) shows the definition of a sentence is by no means a simple matter; although we seem able to recognise sentences readily enough, linguists find it hard to agree on a formal definition. Gray's own view is that the written composition is to be seen as consisting of assertions which are fundamentally either questions or answers. Thus writing is closer to dialogue than is usually thought: 'the meaning of a composition is the sum of its individual assertions as linked together by the inter-assertional relationships, and these inter-assertional relationships are the sum of the implicit questions and the implicit answers. To be able to discern these questions is to be able to read comprehendingly and to write so as to be comprehensible'. (Gray, 1977, p.16).

From this basis Gray develops a system of analysis in some ways like those based on theme and rheme - distinguishing the new (rheme) from the old (theme) information. In this, Gray's approach is similar to that of Halliday's

(e.g. 1978) in that it emphasises the semantic basis of text structure. Winter (1977), influenced by Halliday, has attempted to show that, in fact, the semantic/syntactic distinction is a false one, since many supposed semantic terms linking sentences have a discernible (and analysable) syntactic function.

Recognition of the limitations of syntactic analysis and of problems over definitions of the sentence led to the most commonly used analysis of text in studies of reading, propositional analysis. This works on the assumption that the basic units of meaning are propositions. These consist of arguments linked by a predicator. Kintsch et al (1975) give the following example in which the first word of each line is the predicator.

Fig. 1: Example of Propositional Analysis

THE Greek art PARAGRAPH: SHORT, FEW DIFFERENT ARGUMENTS

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1    (LOVE, GREEK, ART)
2        (BEAUTIFUL, ART)
3        (CONQUER, ROMAN, GREEK)
4        (COPY, ROMAN, GREEK)
5            (WHEN, 3, 4)
6            (LEARN, ROMAN, 8 )
7            (CONSEQUENCE, 3, 6)
8            (CREATE, ROMAN, 2)
Arguments: GREEK, ART, ROMAN (3)
```

Text: The Greeks loved beautiful art. When the Romans conquered the Greeks, they copied them, and, thus, learned to create beautiful art (21 words).

Source: Kintsch et al (1975, p 198)

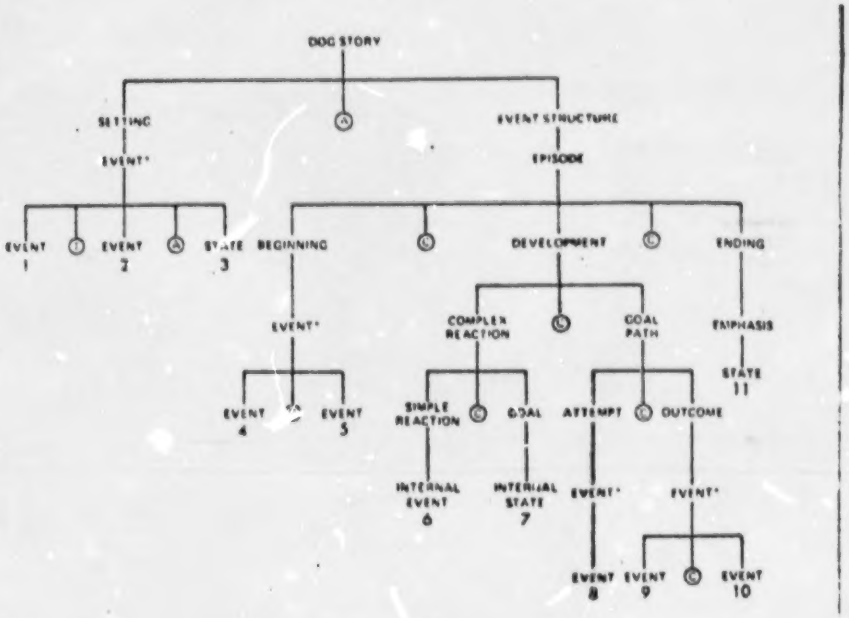
Such analysis forms a 'text base' of ordered lists of propositions which can be tested against the text base obtained by a reader. It is this emphasis on the reader which makes this approach psychological rather than linguistic, though it may also be noted that this kind of analysis provides a description of passages rather than a grammar. Thus it cannot serve to differentiate text from non-text. Aware of this possible criticism Kintsch et al stated that their 'interest is not in describing (or justifying) the theoretical system,

but in showing that significant experimental questions can be asked within this framework' (1975, p.196). Subsequently, (Kintsch and Van Dijk, 1978) the concern is particularly with the macro-structure of text, that is with how propositions are hierarchically structured by author and reader so that, for example, the gist of a text can be represented and discerned. Account is also taken of readers' goals and of the existence of conventional structures in such texts as research reports.

Stories are particularly mentioned by Kintsch and Van Dijk here as having conventional structures and story grammars are perhaps the best established analyses of text. Over half a century ago Propp (1928) in Russia analysed a large number of fairy tales and proposed an analysis according to the functions of characters; for although there is a vast number of characters in any collection of fairy tales, their functions are few. This led Propp and later Greimas (1966) to propose a grammar for stories. Greimas considered that this grammar would be like a semantic grammar of sentences; it is similar, in fact, to the case grammar of Fillmore (1968) on which propositional analysis is based.

Much of the work on stories has an anthropological bias but it has recently come to interest psychologists of memory. Mandler and Johnson (1977) for example, provide an analysis represented in tree diagrams for stories. These show how the parts are related. They base their analysis on rewrite rules as used in sentence grammar, such as: STORY $\longrightarrow$ SETTING AND EVENT STRUCTURE, which is their first example. Thus they can show hierarchical relationships between parts, as in the Dog Story (Figure 2).

Fig. 2: DOG STORY



A representation of the underlying structure of the Dog story. The connections AND, THEN, and CAUSE have been abbreviated to A, T, and C, and encircled. The numbers under the terminal nodes refer to the surface statements of the story.

1 It happened that a dog had got a piece of meat
2 and was carrying it home in his mouth.
3 Now on his way home he had to cross a plank lying across a stream.
4 As he crossed he looked down
5 and saw his own shadow reflected in the water beneath.
6 Thinking it was another dog with another piece of meat,
7 he made up his mind to have that also.
8 So he made a snap at the shadow,
9 but as he opened his mouth the piece of meat fell out,
10 dropped into the water,
11 and was never seen again.

Source: Mandler and Johnson (1977 p 119-120)

Non-fiction has received less attention than fiction, though it may be argued that the structure of information texts is more important from the point of view of design and of developing strategy for reading. Meyer (1975) is concerned with non-literary texts and gives a procedure not only for describing their structure but also for assigning positions in the structure to parts of the text according to their function and importance. This procedure may be seen as a refinement of the flow chart technique used in earlier studies at Brunel University, e.g. Thomas, Augstein and Fawes, 1975).

The approaches mentioned here are among those most commonly used but the review is by no means exhaustive, nor intended to be so. A useful source of information, mainly on recent American work is Tierney and Mosenthal (1980). Hawkes (1977) provides an introduction to rather different traditions, especially to French and Eastern European studies related to mainly literary texts, while Dressler (1978) offers a very varied collection of papers on textlinguistics. Our present purpose is to assess the value of the various analyses and descriptions of text to the study and teaching of reading.

RELEVANCE TO STUDY AND TEACHING OF READING

There must be reservations about the available analyses of text on grounds of incompleteness, as many researchers in this field acknowledge. Nevertheless, it is clear that the developments within linguistics and the interest within psychology which have permitted this work have greatly improved our ability to examine readers *vis à vis* texts. Earlier approaches, such as readability formulae provided no information on the structure of texts, for indeed they sought to iron out structure in reducing a text to a number. Comprehension studies seemed unduly tied to questioning procedures which could inhibit the normal process of reconstruction whereby the reader utilises the structures

which an author employs.

Much of the work on text analysis and reading has, however, taken only one type of reading into account - that is careful reading for learning. Elsewhere (Pugh, 1978) I have argued that undue attention to receptive reading in research and in education has resulted in our failing to appreciate the importance of applying different styles of reading to achieve different purposes in reading.

The emphasis on reconstruction of text - in matching descriptions of the story or the text base with what the readers recall of it - should not lead us to overlook the importance of the reader's rapidly discerning a structure without having to study in detail all the propositions, sentences, etc. which constitute it. Kintsch and Van Dijk (1978) show that they are aware of this limitation both in their discussion of different levels of understanding and of convention in texts.

Generally there is a danger, however, that the detailed analyses may hide the wood in the trees, networks and so on. It would seem that the detailed analyses are research tools which do not readily lead to teaching procedures, though they may help indirectly by providing better understanding of both text structures and readers' perception of them. They may also help children in writing, by providing a means for analysing their own work, and it has been suggested that it may be beneficial for children themselves to analyse texts of the type they read. It has certainly proved possible in the current Nottingham University Schools Council Project on Reading for Learning (T. Greene, personal communication).

Nevertheless, application of these detailed analyses by children begs questions like those which have been posed about the value of conscious knowledge of grammar

in writing. These were perhaps wrongly resolved, in British education at least, by the Newbolt Report (Board of Education, 1921) which accepted that grammar was of little use for this purpose but Keen (1978) has proposed and described how the more suitable grammars now available could be used to this end. Another analogy is with eye movements and subvocal activity which the reader was supposed, according to much of the pedagogical literature until recently (and still in speed reading courses), to control. As argued elsewhere (Pugh, 1978) these are beyond the conscious regulation of the reader, though practice at reading for varied purposes may well necessitate change in habitual patterns in eye movements.

The question remains open as to whether text analysis as most commonly undertaken at present can be of direct use in teaching, and it would be wrong to dismiss the work quite so strongly as does Tuinman (1980); Otto (et al.) (1980) take a different view. However, it will also be unfortunate if the concern with detailed analyses and receptive reading prevents much attention being given to the other development which we mentioned in linguistics - the concern of function. At a higher level of analysis or description than we have been considering, the reader can make decisions as to what he wishes to do with what a writer has to offer. This presupposes knowledge not so much of subject matter (as often thought) but of the broad framework in which a writer expresses his information - the 'conventions' of types of discourse to which Kintsch and Van Dijk (1978) refer.

These authors mention research reports as texts which tend to have a certain structure. More obviously one might add that all alphabetically ordered works (from encyclopedias to telephone directories) have a very conspicuous structure which can relatively readily be explained to children and needs to be so. Text books

similarly often employ fairly conspicuous structuring of information and give aids to locating the information. The teaching of use of books is rather more complicated than may seem to be suggested here (see Neville and Pugh, 1977 and forthcoming). Nevertheless, as our studies have shown, locating information requires attention. As argued here, knowledge of the macro structure of text may be more readily applicable than the knowledge derived from the more micro analyses we have mainly referred to in this paper. Especially if the teaching is in the context of what can be achieved with that knowledge, i.e. there is a concern for communicative function, this might benefit the teaching of reading more generally.

CONCLUSION

'The narratives of the world are numberless' says Barthes (1977, p. 79) and proceeds to discuss ways in which a linguistic basis can be employed in classifying them. More specifically Grimes (1975) has suggested: 'Many texts have the form of a folk tale without necessarily intending to be one. In a considerable amount of scientific writing the hero, the author, slays a dragon, ignorance or the bumbling of former investigators, by means of a helper, a second order differential equation, and thus rescues the victim, his branch of science, (Grimes, 1975, p. 43).

In this paper we have been concerned to come to terms with text analysis, rather than argue for its demise. However, we have also, if without the help of anything so formidable as a differential equation, been keen to point out another aspect or level of the structuring of text, which might lend itself better to teaching. The roots of the world's narratives lie in rhetorical convention as Barthes notes: of informational and argumentative prose in dialogue and dialectic as Gray (1977) argues. There are also conventions

between writer and reader which are more specific in print, which make reading an efficient medium. These deserve and require more study if only for their practical application to developing reading as a purposeful interaction between reader and text.

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